

REMARKS

This Supplemental Amendment is filed following an Examiner interview on July 19, 2007, as summarized below. Reconsideration of the Application is respectfully requested.

Interview Summary

A telephone interview with Examiner Amrany was conducted on July 19, 2007. In addition to the undersigned, Mr. Wayne Callen, the first-named inventor, and Mr. Jack Redfern, who serves as the assignee's primary patent counsel in Australia, also participated in the interview. Applicants thank the Examiner for the courtesy extended in participating in the interview and for agreeing to arrange it at a time which more easily permitted Messrs. Callen and Redfern to participate from Australia.

During the interview, the Paine reference was discussed as were independent claims 19, 25 and 31. The primary points of discussion were the number of coils in the relays disclosed by Paine and the manner in which Applicant's invention uses a reference voltage to sense a fault. An agreement was not reached, although Applicants believe both sides came away with a better understanding of the other's respective position and that the claims presented in this Supplemental Amendment are commensurate with a common understanding of certain distinctions between Paine and Applicant's invention.

Amendments to the Claims

Claims 19, 25 and 31 are amended. Claims 35-37 are cancelled without prejudice. Support for the amendments is found throughout the specification as originally filed; no new matter is presented.

Rejection under 35 U.S.C. § 102(b)

As of the last Office Action, claims 25-27, 30-33 and 36-38 were rejected as assertedly rejected by Paine. Claims 25 and 31 are independent. Applicants traverse the rejection.

The examiner is reminded that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987)." See Manual of Patent Examining Procedure, 8th Edition (MPEP), Section 2131.

In addition, "[t]he identical invention must be shown in as complete detail as is contained in the ... claim.' *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989)." See MPEP, Section 2131.

Each of independent claims 25 and 31 include the limitation of a single coil in the switching relay and a single coil in the sensor relay, in stark contrast to Paine which requires two coils in each of the switching relay and the sensor relay, all of which are required for operation. Paine also fails to disclose that the sensor coil is energized in response to a reference voltage that indicates a fault condition.

Thus, Paine cannot anticipate the claimed invention found in independent claims 25 and 31, and the rejections under 35 U.S.C. §102 should be withdrawn. Likewise, for at least these reasons, dependent claims 26-27, 30, 32-33 and 38 are also not anticipated by Paine.

Rejection under 35 U.S.C. § 103(a)

As of the last Office Action, claims 19-23, 28-29 and 36-37 were rejected as assertedly obvious over Paine in view of Ahuja. Claim 19 is independent. Applicants respectfully traverse the rejection.

Like claims 25 and 31, the switching relay and sensor relay of independent claim 19 each have a single coil. Paine has no such teaching, but instead requires four coils for its circuit to operate, nor do Paine's teachings in anyway fairly suggest Applicant's claimed invention. Paine is directed to a fundamentally different approach to electrical protection than that is provided by the embodiments of the present invention. Particularly, Paine is concerned with monitoring over-current conditions occurring during a fault, whereas the present invention is directed to monitoring changes in a reference voltage such that when a reference voltage change occurs as a result of a developing fault condition, the circuit is switched so that an over-current condition does not occur in the first place.

Paine, as understood, teaches a device in the form of a relay circuit breaker (10) that disconnects a load from a power source. Paine teaches a load (12) and a circuit breaker (10) that includes two relays, a switching relay (20) and a sensing relay (30). The switching relay (20) includes two coils (21, 22) and the sensing relay (30) includes two coils (31, 32). The circuit breaker (10) thus includes four coils, and requires all four coils to operate. When the load current flowing through the conductor (46) is "considered excessive" (*See Paine*, col. 3: 1-2) the

coil (32) switches the armature (33) to contact with a relay contact (35) (col. 1, line 74 to col. 2, line 2). This subsequently causes the coil (22) to energize and switch the armature (23) to the relay contact (24) thereby electrically disconnecting the source from the load (col. 2, lines 20-27). The coil (31) is then energized, resulting in the armature (33) contacting with the relay contact (34) and subsequently de-energizing the coil (22). Coil (31) will remain energized until the fault condition is removed and circuit breaker (10) is operating under normal conditions. Under those normal operating conditions, coil (21) is at least momentarily energized and coil (32) is energized. That is, the operation of the circuit is dependant upon the energizing and de-energizing of all four coils.

The operation of the present invention in independent claims 19, 25 and 31 is significantly different to the operation of the system of Paine. The use of a single coil in the present invention in the switching relay results in a less complex construction of the embodiments of the invention and produces a system that has a more beneficial and desirable size, is more reliable, consistent, serviceable, and cheaper to operate and manufacture. Further, Paine teaches monitoring the over-current conditions as a means for detecting faults, while the present invention operates independently of load current conditions and instead senses reference voltage. As a result of sensing a reference voltage instead of load current conditions, the present invention operates more quickly and more consistently and can detect faults without over-current conditions.

Ahudja does nothing to overcome the deficiencies of Paine.

Ahuja, as understood, is directed to a device in the form of an auto-reset circuit breaker (10) that disconnects a load (14) from a source (12) by detecting the voltage across a resistor (18) through which the load current flows. The circuit breaker (10) is an over-voltage/over-current auto-reset circuit breaker (*See Ahuja*, page 5: 20-21). Circuit breaker (10) is intended to detect an over-voltage and an over-current at the load (10) and to do so teaches the use of a resistor (18) to measure load current and a detector (34) to measure the voltage differential between a neutral point and a point that in normal use is active.

Thus, neither reference teaches or fairly suggests that each of a switching relay and a sensing relay in the control circuit has a single coil. Nor does either reference describe the use of a reference voltage to energize the sensor coil, because both references – unlike Applicant's

claimed invention – are directed to sensing an over-current fault condition. Succinctly, Paine and Ahuja both recite devices that in order to operate, must sense the load current of the relevant load being protected. In contrast, the present invention is able to operate independently of load current and senses reference voltage levels.

CONCLUSION

Accordingly, for at least these reasons, Applicants respectfully request that the Application be allowed and passed to issue. In the event any outstanding issues remain, Applicants would appreciate the courtesy of a telephone call to Applicants' undersigned representative to resolve such issues in an expeditious manner.

It is believed that no fees are due with the filing of this paper. In the event that Applicants are mistaken in their calculations, the Commissioner is authorized to deduct any fees determined by the Patent Office to be due from, or credit any overpayment to, the undersigned's Deposit Account No. 50-1059.

Date: August 10, 2007

Respectfully submitted,

MCNEES WALLACE & NURICK LLC
Attorneys for Applicants
By:

/Shawn Leppo/

Shawn K. Leppo, Reg. No. 50,311
P.O. Box 1166
100 Pine Street
Harrisburg, Pennsylvania 17108
Direct Dial: (717) 237-5218
Facsimile: (717) 260-1718